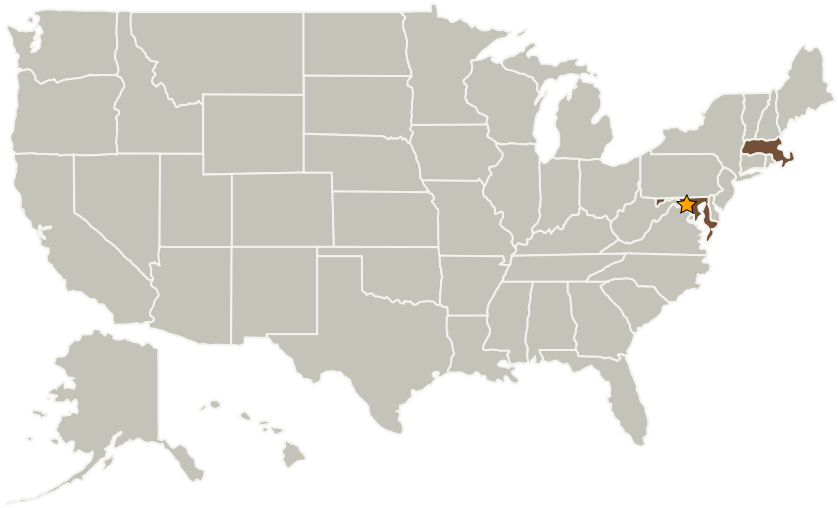
A Novel Low-Cost Dual-Wavelength Precipitation Radar Sensor Network, Phase II

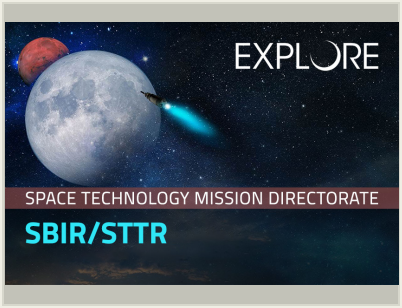
Completed Technology Project (2005 - 2007)

Project Introduction

Remote Sensing Solutions, Inc. (RSS) has developed a novel, practical design that will produce a low-cost precipitation radar / radiometer sensor. Operating in a stand-alone mode or in a network configuration, this system will provide the measurements critical to the NASA Global Precipitation Mission (GPM) calibration / validation efforts. With its unique ability to acquire simultaneous dual polarized, dual wavelength, active and passive measurements, this instrument will be capable of providing NASA and the research community with unique data that will significantly further research in the areas of precipitation rate and particle size retrievals. By utilizing solid-state technology and an innovative pulse compression scheme, the sensor can be built at a fraction of the cost of conventional precipitation radar while still maintaining the required sensitivity. The proposed Phase II effort will focus on developing and demonstrating the performance of two key innovations: the dual polarized, dual wavelength wideband antenna feed and transceiver.

Primary U.S. Work Locations and Key Partners





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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Remote Sensing Solutions, Inc.	Supporting Organization	Industry	Barnstable, Massachusetts

Primary U.S. Work Locations	
Maryland	Massachusetts

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.4 Microwave, Millimeter-, and Submillimeter-Waves